ER Site No. 55: Red Towers Site (Thunder Range)

ADS: 1335
Operable Unit: Southwest Test Area

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Site History

ER Site 55, the Red Towers Site, is located in the southern part of Thunder Range approximately 600 ft southeast of the Equus Red Site. It consisted of a metal tower approximately 75 feet tall which was designed to be used for a variety of testing activities involving simulated weapons units. Access to the site is partially restricted, but it can be entered by driving around the outside of the north Thunder Range fence.

Historical activities at this site, based on interviews with the Range Manager, were limited to two test detonations. Test units were detonated atop a single tall metal tower; a helicopter flew through the dispersion cloud and took measurements. After the tests, the tower was disassembled since it did not conform to the requirements of lightening and aircraft safety and was left lying on the site until it was removed as part of the Voluntary Corrective Measure (VCM) activities conducted in 1996. The test units consisted of a shell of depleted uranium and approximately 50 lbs of explosives and some beryllium pusher plates. Detonations ejected debris to a height of 1000 feet. However, the density of the particulate cloud and quantity of dispersed material falling to the ground decreased with increasing distance from the firing site. Approximately 25 percent of the material dispersed during the detonation probably fell within 50-100 ft of the tower.

Suspected contaminants include high explosives (HE), lead, beryllium, and depleted uranium (DU). There were detectable levels of radioactivity on the tower pieces. Radioactive debris was probably scattered by the shots because grass fires occurred after the shots. There were D38 cases on the test units. Most solid fragments of DU were incinerated, but small (approximately 0.5-inch diameter) pieces may have been scattered around. Radioactive debris was usually propelled into the air and burned, leaving only residual dust.

The terrain in the vicinity of the site is flat and open. Precipitation is low in the region and surface water runoff is minimal. Alluvial deposits underlie the site to an undetermined depth. The site occurs in an area of SNL with considerable structural complexity in the subsurface. Several major fault systems with different orientations and offsets may intersect in the area.

Depth to groundwater is unknown but may be up to 500 feet for the major aquifer with a possibility of minor shallower saturated zones.

Constituents of Concern

HE
Lead
Beryllium
DU

Current Hazards

There are no current hazards at this site related to contamination of the surface or subsurface soils. There are no structures or stored materials that remain at the site that are a potential hazard.

Current Status of Work

Surface radiation surveys in 1995 and 1996 and subsequent Voluntary Corrective Measures (VCM) removed large amounts of DU-contaminated soil. The tower was cut up and removed from the site in 1996. A follow-up surface radiation survey on the soils identified additional radiological anomalies in the immediate area of the tower, and in a drainage on the southern boundary of the site. Two additional 100% surveys were conducted in 1998 to verify the anomalies and to fully determine their extent. Surface soil samples were also collected from the area and analyzed for metals, HE, and gamma spec.

A risk-based No Further Action Proposal was submitted to the New Mexico Environment Department (NMED) in May 1999. NMED found Site 55 to be acceptable for NFA petition in September 1999. The NFA was approved by NMED in October 2000 after completing the public review and permit modification process.

Future Work Planned

No further work is planned.

Waste Volume Estimated/Generated

Total waste generated to date is 115 drums of radioactive waste soil and approximately 10,000 pounds of radioactive contaminated steel from the tower.

Information for ER Site 55 was last updated Jan 22, 2003.